APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/533,062	04/28/2005	Tadaaki Tanimoto	TAM-104	3125

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ART UNIT	PAPER NUMBER
2825	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *28 April 2005*.

2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1-7* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *1-7* is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☒ The drawing(s) filed on *28 April 2005* is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☒ All b) ☐ Some * c) ☐ None of:

      1. ☒ Certified copies of the priority documents have been received.

      2. ☐ Certified copies of the priority documents have been received in Application No. _____ .

      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date *4/28/2005*.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____ .

DETAILED ACTION

1.   Responsive to communication application 10/533,062 filed on 4/28/2005 has

been examined. Claims 1-7 are pending.

Information Disclosure Statement

2.   The information disclosure statement filed 4/28/2005 fails to comply with 37 CFR

1.98(a)(2), which requires a legible copy of each cited foreign patent document; each

non-patent literature publication or that portion which caused it to be listed; and all other

information or that portion which caused it to be listed. It has been placed in the

application file, but the information referred to therein has not been considered. Foreign

patent documents that were not submitted are by H. Okewatari (AR), S. Kitaguchi (AS),

and T. Kitani (AU).

Claim Rejections - 35 USC § 102

3.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4.   **Claims 1 and 7 are rejected** under 35 U.S.C. 102(e) as being anticipated by

Flake et al. (Flake) (US 7,035,781) and/or Bowen (US 6,691,301).

5.   **Pursuant to claims 1 and 7**, Flake and/or Bowen disclose:

inputting program descriptions which define a plurality of devices by employing a program language capable of describing parallel operations (Flake, Col. 1, ll. 44-67 – Col. 2, ll. 1-3) (Bowen, Col. 1, ll. 47-61, Col. 9, ll. 63-67 – Col. 10, ll. 1-43);

converting the input program descriptions into an intermediate expression (Flake, Col. 1, ll. 57-67 – Col. 2, ll. 1-3, compiler conversion of language source code) (Bowen, Col. 44, ll. 25-55, compile Handel-C to VHDL);

generating parameters which satisfy a real-time restriction, for the intermediate expression (Flake, Col. 12, ll. 9-67, wrapper parameter) (Bowen, Col. 9, ll. 55-67 – Col. 10, ll. 1-11, requirements, Col. 229, ll. 9-51, behavioral description and varying parameters); and

synthesizing circuit descriptions which are based on a hardware description language (Flake, Col. 6, ll. 3-17, logic synthesis, HDL) (Bowen, Col. 44, ll. 25-55, compile Handel-C to VHDL, RTL synthesis), on the basis of the generated parameters (Flake, Col. 9, ll. 40-67 – Col. 10, ll. 1-25) (Bowen, Col. 229, ll. 9-51, behavioral description and varying parameters).

Claim Rejections - 35 USC § 103

6.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7.   **Claims 2-5 and 7 are rejected** under 35 U.S.C. 103(a) as being unpatentable

over Flake et al. (Flake) (US 7,035,781) and/or Bowen (US 6,691,301) in view of Hines

(2005/0246682).

8.   Flake et al. (Flake) (US 7,035,781) and/or Bowen (US 6,691,301) disclose all of

the elements of claims 1 and 6 from which claims 2-5 and 7 depend, respectively.

9.   **Pursuant to claim 2**, Flake et al. (Flake) (US 7,035,781) and/or Bowen (US

6,691,301) involve HDL which is behavioral, but do not disclose wherein an

intermediate expression is a member selected from the group consisting of a concurrent

control flow flag, a temporal automaton with a concurrent parameter, and a temporal

automaton with parameters.

10.   Hines does disclose programming languages (Hines, Paragraphs 5-7) and also

automata (Hines, Paragraphs 649–673, behavioral automata).

11.   It would have been obvious to one of ordinary skill in the art at the time of

Applicant's invention to incorporate/combine the behavioral automata of Hines to avoid

hazards through the use of built-in causality semantics (Hines, Paragraph 671).

12.   **Pursuant to claim 3,** Flake and/or Bowen in view of Hines disclose wherein

parametric model checking is performed for the parameter generation (Flake, Col. 15, ll.

28-67 – Col. 16, ll. 1-3) (Bowen, Col. 83, ll. 15-59, compile-time or run-time checking).

13.   **Pursuant to claim 4,** Flake and/or Bowen in view of Hines disclose wherein the

real-time restriction is given by RPCTL (Hines, Paragraphs 198-205, runtime

constraints, runtime algorithms).

14.   **Pursuant to claim 5,** Flake and/or Bowen in view of Hines disclose wherein the program descriptions define the devices by using a "run" method (Hines, Paragraphs 198-205, runtime constraints, runtime algorithms), and define clock synchronizations of the devices by using barrier synchronizations (Hines, Paragraphs 255-261).

15.   **Pursuant to claim 7**, Flake et al. (Flake) (US 7,035,781) and/or Bowen (US 6,691,301) do not disclose wherein the program descriptions define the devices by using a "run" method, and define clock synchronizations of the devices by using barrier synchronizations.

16.   Hines does disclose wherein the program descriptions define the devices by using a "run" method (Hines, Paragraphs 198-205, runtime constraints, runtime algorithms), and define clock synchronizations of the devices by using barrier synchronizations (Hines, Paragraphs 255-261).

17.   It would have been obvious to one of ordinary skill in the art at the time of Applicant's invention to incorporate barrier synchronizations of Hines in order to enforce synchronization of activities (Hines, Paragraphs 255-261).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patrick Sandoval whose telephone number is 571-272-7973. The examiner can normally be reached on 8:00 am to 5:30 pm Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Jack Chiang can be reached on 571-272-7483. The fax phone number for

the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Patrick Sandoval
Art Unit 2825

JACK CHIANG
SUPERVISORY PATENT EXAMINER